

IN THE CLAIMS

1-13. (Cancelled)

Claim 14 has been amended as follows:

14. (Currently amended) A medical system for detecting heart events comprising:

an electrode lead comprising a multi-dot electrode unit comprising at least three dot electrodes, said multi-dot electrode unit being adapted for intracorporeal sensing configured to intracorporeally sense of heart signals, with each dot electrode sensing an individual signal;

a processor connector to said electrode lead and supplied with the respective individual signals sensed by the dot electrodes, said processor combining said individual signals and determining to produce a synthetic reference signal, and determining a difference between each individual signal and said synthetic reference signal, and said processor forming an indication signal based on the respective differences, said indication signal being indicative of heart events.

Claim 15 has been amended as follows:

15. (Currently amended) A medical system as claimed in claim 1 wherein said processor determines produces said synthetic reference signal as a synthetic reference voltage.

Claim 16 has been amended as follows:

16. (Currently amended) A medical system as claimed in claim 14 wherein said processor determines produces said synthetic reference signal (SR-signal) according to:

$$\text{SR-signal} = 1/N \times \sum (U_1 + \dots + U_N)$$

wherein N is the number of said dot electrodes, and $U_1 \dots U_N$ are dot electrode potentials relative to an electrical reference point.

17. (Previously presented) A medical system as claimed in claim 16 wherein said processor determines, for each of said dot electrodes, a differential dot electrode value $A_{\text{diff}(i)}$ according to:

$$A_{\text{diff}(i)} = U_i - \text{SR-signal}$$

wherein $i = 1 \dots N$.

18. (Previously presented) A medical system as claimed in claim 17 wherein said processor determines said indication signal by adding respective absolute values of $A_{\text{diff}(i)}$, wherein $i = 1 \dots N$.

19. (Previously presented) A medical system as claimed in claim 17 wherein said processor determines said indication signal by adding respective squared values of $A_{\text{diff}(i)}$, wherein $i = 1 \dots N$.

Claim 20 has been amended as follows:

20. (Currently amended) A medical system as claimed in claim 17 wherein
~~said processor determines said indication signal dependent on signal contents of A medical system as claimed in claim 17~~ wherein said processor determines said indication signal by adding respective absolute values of $A_{\text{diff}(i)}$, wherein $i = 1 \dots N$.

21. (Previously presented) A medical system as claimed in claim 14 comprising a discrimination unit supplied with said indication signal, said discrimination unit generating a detection signal, indicating detection of a heart event, if said indication signal fulfills predetermined heart event detection criteria.

22. (Previously presented) A medical system as claimed in claim 14 wherein said processor is disposed in said electrode lead, electrically connected to said multi-dot electrode unit.

23. (Previously presented)A medical system as claimed in claim 14 wherein said multi-dot electrode unit is disposed at a distal end of said electrode lead.

24. (Previously presented)A medical system as claimed in claim 14 wherein said processor determines said synthetic reference signal as an average value of at least three dot electrode potentials respectively detected for at least three of said dot electrodes.

25. (Previously presented)A medical system as claimed in claim 14 comprising an implantable medical device containing said processor, said implantable medical device having a connector that mechanically and electrically connects said electrode lead to said implantable medical device.

Claim 26 has been amended as follows:

26. (Currently amended) A medical system as claimed in claim 14 comprising a stimulation pulse generator connected to said electrode lead and to said multi-dot electrode unit, said stimulation pulse generator emitting stimulation pulses and said multi-dot electrode unit being adapted to participate in delivering said stimulation pulses to tissue.

27. (Previously presented)A medical system as claimed in claim 26 wherein said processor operates to change a mode of operation for said multi-dot electrode unit between a detection mode and a stimulation mode.